**Investigation of antimicrobial activities of *Monascus purpureus* pigment against pathogenic bacteria**

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**‌ Statement of Problem:** Natural pigments are prepared from two important sources: plants and microorganisms. The colors produced from fungi have many applications in the nutrition and economy of human society, and in the industry they are able to have a business of about 30 billion dollars in profit per year. *Monascus purpureus* fungi is of special interest due to its high ability to produce different pigments in terms of color and chemical stability. This fungi belongs to the category of ascomycetes, it has many properties and uses, including coloring, flavoring, and food preservative and cholesterol reducer  
**Research Purpose**: according to some benefits of this pigments against some disease, Investigation of antimicrobial activities of *Monascus purpureus* pigment against pathogenic bacteria

**Research Method:** *Monascus purporeus* was cultured on PDA at 30 C for 7 days, Extraction of pigments was determined with ethanol 70% A volume was extracted and the optical density was measured at a wavelength of 510 nm. Antimicrobial activity of the fungi pigments against pathogenic bacteria *E.coli, S.aureus and Psedomonas aeroginosa* was examined by disc diffusion and well diffusion methods. The minimum inhibitory concentrations (MIC) and the minimum bactericidal concentrations (MBC) was determined.

**Results and Conclusion:** The results showed that the pigments of this fungi had an effect only on *S. aureus,* which is a gram-positive bacteria, and the zone of inhibition was 22 mm, MIC was 0.64 mg/ml, and MBC was 0.64 mg/ml. The pigment had no significant antimicrobial effect on gram-negatives. And as a result, it is possible to produce a product from this fungi using cheap carbon sources, which has beneficial effects in the food and pharmaceutical industries and also has an antimicrobial effect on the bacteria causing food poisoning.

**Keywords** *Monascus purpureus*, Antibacterial activity, pigment, fungus